Course Code	Course Name	Grade Levels	Description	High School Credit Options*	License/credential Required**
17030	Auto Collision Technology I	10-12	This is the beginning course for students interested in auto body repair. It is part of a sequential series of courses covering repair of damaged bodies, fenders and replacement parts. Students will be introduced to painting preparation and painting methods. This is a prerequisite to Auto Collision Technology II.	1 or 2  Max credit = 2	License Code:
17031	Auto Collision Technology II  Prerequisite: Auto Collision Technology I - 17030	11-12	To prepare students for employment in the auto body occupation. All phases of repairing damaged bodies and fenders including metal straightening by hammering, smoothing areas by filing, grinding or sanding, concealment of imperfections, painting and replacement of body components, including trim. Students completing this sequential course will be eligible for ASE certification as noted in the NATEF guidelines.	2 Max credit = 2	17031-Auto Collision Technology  ◆ 10-12
17032	Automotive Technology I	10-12	To begin preparation for employment as an ASE certified auto technicians. This sequential course will include topics in vehicle engine, power transmission, steering, brakes, and electrical systems.	1 or 2  Max credit = 2	
17037	Automotive Technology II  • Prerequisite: Automotive Technology I - 17032	11-12	Continued preparation in vehicle engine, power transmission, steering, brakes and electrical systems will be provided. Included in training is the use of diagnostic and testing equipment and tools used in the repair process. Students completing this sequential course will be prepared to enter college Automotive programs and can become eligible for ASE certification in 3-4 areas as noted by NATEF guidelines.	2 Max credit = 2	License Code: 17032-Automotive Technology ◆ 10-12
17038	Automotive General Service Technology I	10-12	The General Service Technology program begins with an orientation to the eight areas of NATEF standardized programming – Engine Repair, Automatic Transmissions, Manual Drive, Suspension and Steering, Brakes, Electrical/Electronic Systems, Heating and Air Conditioning and Engine Performance. This is a sequential course and is a prerequisite to Automotive General Service Technology II.	1 or 2 Max credit = 2	

Course Code	Course Name	Grade Levels	Description	High School Credit Options*	License/credential Required**
17039	Automotive General Service Technology II  Prerequisite: Automotive General Service Technology I - 17038	11-12	The second year General Service Technology program consists of a two-hour course continuing orientation to Engine Repair, Automatic Transmissions, Manual Drive, Suspension and Steering, Brakes, Electrical/Electronic Systems, Heating and Air Conditioning and Engine Performance. Students must complete the Electrical/Electronic Systems standard to pass complete the course. Automotive General Service Technology is a preparatory program to enter college Automotive Technology and does prepare students to be eligible for ASE certification.	2 Max credit = 2	License Code: 17032-Automotive Technology
17035	Parts Merchandising & Management	10-12	Students will gain knowledge and skills that will enable them to recognize various parts, fill out sales receipts, and collect payments or file the charges on the customer's account. The student will become familiar with the needs of the customer and learn how to stock and merchandise the latest parts to meet their needs. Parts Merchandisers are found in occupational settings such as automotive dealerships, retail parts stores, wholesale distributors and others. Students will become aware of occupational and advanced training opportunities in Parts Merchandising.	2 Max credit = 2	License Code: 17035-Parts Merchandising & Management
17040	Diesel Technology	10-12	The student will gain an understanding of all various types of diesel engines, information, and actual experience in how to dissemble and reassemble an engine, basic parts operation, and service. Experiences will be gained in troubleshooting, rebuilding, and tuning different types of diesel engines. Students will become aware of occupational and advanced training opportunities in diesel technology.	2 Max credit = 2	License Code: 17040-Diesel Technology ◆ 10-12

Course Code	Course Name	Grade Levels	Description	High School Credit Options*	License/credential Required**
17045	Introduction to Commercial Driving License (CDL)	12	The focus of this class is to give the students an understanding and skills to obtain a CDL certification. Students will start with the basics and move up to the finer points of the trade. Topics include required CDL Manual subjects such as General Knowledge, Air Brakes, and Combination Vehicle, as well as Tanker and Doubles/ Triples endorsements. Also covered are hours of service, weight and balance, vehicle out-of-service regulations, and National Safety Council professional truck driver DDC. Students will use a school-owned tractor-trailer to log behind-the-wheel hours for real-world experience and to practice for the test. At the end of the year students will have been taught the skills to obtain a CDL permit and pass the CDL drivers test. Students need to be 18 to obtain the CDL permit and to earn the CDL license.	1  Max credit = 1	License Code: 17045-Introduction to Commercial Driving License (CDL)  ◆ 10-12
17050	Culinary Arts I	10-12	Culinary Arts I introduces students to the occupation concerned with preparation and service of food. Contents may include: opportunities in the food service industry, career maturity skills, safety and sanitation, organization of food preparation, menu planning and recipe selection and food purchasing. This course is a prerequisite to Culinary Arts II.	1 or 2  Max credit = 2	License Code: 17050-Culinary Arts
17051	Culinary Arts II  Prerequisite: Culinary Arts I - 17050	11-12	Culinary Arts II continues training for the occupation of food service and additionally includes topics on financial management, current issues in food service, legislation affecting the industry and its workers and career maturity skills. The Culinary Arts program prepares students for college programs in food service.	2 Max credit = 2	• 10-12 °

Course Code	Course Name	Grade Levels	Description	High School Credit Options*	License/credential Required**
17072	Commercial Art I	10-12	Commercial Art I introduces students to the skills required to become a commercial artist. Application of art to the design of commercial products for the purpose of decorative, aesthetic effects and current styling will be introduced. Software applications will be introduced so students are able to develop products electronically. The Commercial Art course is a prerequisite to Commercial Art II.  Note: This course can be taught for CTE credit only. For Fine and Performing Arts credit, Commercial Art	1 or 2  Max credit = 2	License Code:
			can be found under Fine and Performing Arts.		17073-Commercial Art
17073	Commercial Art II	11-12	Commercial Art II continues skill development in design	2	♦ 10-12
	◆ Prerequisite: Commercial Art I - 17072		and aesthetic affects of products. Advanced software applications and training is incorporated. The course also includes orientation to production methods and product knowledge. The Commercial Art program prepares students to enter college commercial art programs.	Max credit = 2	
			Note: This course can be taught for CTE credit only. For Fine and Performing Arts credit, Commercial Art can be found under Fine and Performing Arts.		
17080	Photography	10-12	Students will gain knowledge and skill that will enable them to recognize and understand Commercial Photography in the following areas: 35 mm Camera Operation, Film Processing, Printing/Enlarging, and Lighting. Students will become aware of occupational and advanced training opportunities in Photography.	1 or 2  Max credit = 2	License Code: 17080-Photography ◆ 10-12
			Note: This course can be taught for CTE credit only. For Fine and Performing Arts credit, Photography can be found under Fine and Performing Arts.		
17100	Construction Technology I	10-12	Construction Technology I provides an orientation to the construction trade the meets industry standards. The course is standards based beginning with the Core Curriculum which includes Basic Safety, Construction Math, Introduction to Hand and Power Tools, Introduction to Blue Prints, Basic Rigging, Communication and Employability Skills. Fundamentals of Construction are introduced including Floor Systems, Wall Systems, Roof Systems and Structure Enclosure. Construction Technology I is a prerequisite to Construction Technology II.	1 or 2  Max credit = 2	License Code: 17100-Construction Technology

Course Code	Course Name	Grade Levels	Description	High School Credit Options*	License/credential Required**
17117	Construction Technology II  • Prerequisite: Construction Technology I - 17100	11-12	Construction Technology II continues with the Fundamentals of Construction with advanced training in Floor, Wall and Roof Systems. Advanced enclosure techniques will be included. Enhanced safety protocol will be included with emphasis on safety practices on project and the use of a safety officer. Students who successfully complete course modules and meet all safety standards will be eligible to receive national recognition and can articulate the national recognition into college construction craft programs.	2  Max credit = 2	
17101	Virtual Center Construction Technology Summer Academy	10-12	Construction Technology 17101 provides a hands-on opportunity for students to integrate classroom materials such as Basic Safety, Construction Math, Introduction to Hand Tools and Power Tools, Introduction to Blueprint Reading, Communication and Employability Skills with a summer academy. This summer academy will combine the classroom skills with hands-on learning of construction fundamentals including Wall Systems, Floor Systems, Roof Systems and Structure Enclosure.  Virtual Construction Technology Summer Academy must be part of Construction Technology I and II and is only for students in established Virtual Centers. This class must be offered as part of the Construction Technology program. The Virtual Center must receive prior approval from the Department of Career and Technical Education before offering the Construction Technology class as an option.	½  Max credit = ½	License Code: 17100-Construction Technology
17110	Facilities Maintenance I	10-12	Facilities Maintenance I orientates students to careers in maintaining buildings such as office buildings or schools. The course is standards based beginning with the Core Curriculum which includes Basic Safety, Construction Math, Introduction to Hand and Power Tools, Introduction to Blue Prints, Basic Rigging, Communication and Employability Skills. Introduction to door repair or replacement, window repair or replacement, maintaining various floor surfaces and understanding cleaning methods for a variety of surfaces. Facilities Maintenance I is a prerequisite to Facilities Maintenance II.	1 or 2  Max credit = 2	License Code: 17110-Facilities Maintenance

Course Code	Course Name	Grade Levels	Description	High School Credit Options*	License/credential Required**
17118	Facilities Maintenance II  • Prerequisite: Facilities Maintenance I- 17110	11-12	Facilities Maintenance II incorporates advanced skill training. The Core Curriculum is completed and enhanced safety protocol including participation as a safety officer is included. Additional topics will be introduced including electrical device service, plumbing fixture maintenance and landscape maintenance. Students who successfully complete course modules and meet all safety standards will be eligible to receive national recognition and can articulate the national recognition into college construction craft programs.	1 or 2  Max credit = 2	License Code: 17110-Facilities Maintenance
17112	Heating, Ventilating, & Air Conditioning	10-12	This is an introductory course that addresses air quality standards of the interior environment. Instruction will be provided in the areas of heating and cooling. Students will learn the basic concepts in circulating and cleaning the air as well as adding or removing humidity. An introduction covers safety, tools, equipment and the fundamentals of electricity. Students will work with electrical components, wiring, compressors, evaporators, condensers and metering devices. Troubleshooting methods will be taught in heating and cooling systems.	1 or 2  Max credit = 2	License Code: 17112-Heating, Ventilating, & Air Conditioning  ◆ 10-12
17113	Automated Manufacturing	10-12	Students will gain knowledge of the concepts and career opportunities in the manufacturing industry. Craft course offerings will include courses such as metal welding, machining, blueprint reading, fabrication, robotics, assembly, industry terminology, safety, tools, milling, electrical principals, and measurement. Course of study will also incorporate leadership skills, professional development and organizational skills.	1 or 2  Max credit = 2	License Code: 17113-Automated Manufacturing
17115	Sheet Metal Technology	10-12	This course provides instruction in the sheet metal industry as it relates to the cooling and heating of interior environments. The following aspects of the sheet metal industry will be introduced: basic safety, math; hand tools, power tools; blueprints and specifications; fasteners, hangers and supports; steel and other metals; and an introduction to insulation. Sheet metal processes will include sheet metal duct fabrication; gutters and downspouts, and roof flashing.	1 or 2  Max credit = 2	License Code: 17115-Sheet Metal Technology

Course Code	Course Name	Grade Levels	Description	High School Credit Options*	License/credential Required**
17120	Residential Plumbing	10-12	This course provides the student with the basic knowledge of the plumbing code, trade skills, job site expectations and blueprint reading. The curriculum includes state codes, various aspects of materials, equipment and fixtures, service and installation procedures. Activities will include; layout of water and sanitation systems; working with a variety of materials such as cast iron, plastic, copper and steel; setting fixtures and proper hookups; and plumbing service.	2 Max credit = 2	License Code: 17120-Residential Plumbing
17125	Electrical Technology	10-12	This program will provide students with the background necessary to enter the field of electrical wiring in residential construction. The course of study includes; electrical fundaments, electrical code study, math, residential wiring, electrical drafting and blueprint reading, and alternating current theory. Hands-on practical wiring of equipment circuits will be provided in a laboratory setting.	2 Max credit = 2	License Code: 17125-Electrical Technology
17130	Drafting Technology I	10-12	Drafting Technology I introduces careers in drafting. The course covers theory, laboratory and shop work related to gathering and translating data or specifications. Orientation to the use of drafting tools and beginning Computer Aided Drafting software is included in the first year. The types of drafting introduced include architectural, mechanical, structural, pneumatic, marine, electrical-electronic, topographical as well as other drawings and sketches. Drafting Technology I is a perquisite course to Drafting Technology II.	1 or 2  Max credit = 2	License Code: 17130-Drafting Technology
17131	Drafting Technology II  ◆ Prerequisite:     Drafting     Technology I -     17130	11-12	Drafting Technology II provides advanced software applications training requiring greater detail and accuracy. Use of reproduction materials, equipment and processes, preparation of reports and data sheets for specification writing, development of plan and process charges and development of models will be included. Completion of the Drafting Program prepares students for college drafting.	2 Max credit = 2	<b>♦</b> 10-12

Course	Course Name	Grade	Description	High School Credit Options*	License/credential Required**
Code		Levels			1: 0
17140	Television Production	10-12	To prepare students for employment in Television Communications. Television Production is designed to offer students basic job entry knowledge and skills needed in television production. The course offers an indepth study of the television field. There is also a heavy concentration on "hands on" experience in actual production. The student will learn how to prepare, produce and evaluate television productions, as well as understand viewer impact. The student will demonstrate	1 or 2  Max credit = 2	License Code: 17140-Television Production
			proficiency in the use of all equipment used in television production. Emphasis on applied academics, professional development, leadership, and organization skills are integrated throughout the curriculum.		
17150	Electronics Technology I	10-12	Electronics Technology I will provide students with a working knowledge of Direct Current (DC) and Alternation Current (AC) theory and application. Integrated math and physic concepts will be provided to support the understanding of DC and AC circuitry. Electronics Technology I is a prerequisite course to Electronics Technology II.	1 or 2  Max credit = 2	
17151	Electronics Technology II  Prerequisite: Electronics Technology I - 17150	11-12	Electronics Technology II continues skill development using solid state technology such as diodes, transistors, integrated circuits, optoelectronic devices, digital electronics, power supplies and amplifiers. Additional topics that will be included are communication, instrumentation, lasers, security systems and electronic systems technology. Articulation with college electronics programs is available. Electronics Technology II is a prerequisite to Electronics Technology III.	1 or 2	License Code: 17150-Electronics Technology ◆ 10-12
17152	Electronics Technology III  Prerequisite: Electronics Technology II - 17151	11-12	Designing and installing computer networks, home theater, security systems and Programmable Logic Computers. Students will also have opportunities for Career tours and hands-on projects to enhance the students understanding of the electronics career field. Full articulation agreements with post-secondary education with successful completion of the course.	1 or 2  Max credit = 2	

Course Code	Course Name	Grade Levels	Description	High School Credit Options*	License/credential Required**
17190	Graphic Communications I	10-12	Graphic Communications I includes instruction in graphic theory, hot and cold typesetting, lithography, photoengraving and other graphic arts related to the printing industry. Emphasis on applied academics, professional development, leadership and organizational skills are integrated. Graphic Communications I is a prerequisite course to Graphic Communications II.	1 or 2  Max credit = 2	License Code: 17190-Graphic
17191	Graphic Communications II  Prerequisite: Graphic Communications I - 17190	11-12	Graphic Communications II provides advanced instruction in typographical layouts and designs, hand and machine typesetting, camera and plate work. Emphasis on applied academics, professional development, leadership and organizational skills are integrated. Graphic Communications	2 Max credit = 2	Communications
17230	Machine Tooling Technology	10-12	To prepare students to enter the machine tool operation. Covers the theory and shop work related to the teaching of safe and intelligent operation of machines found in industry are emphasized. Included is practical application of theory which is required by the occupation. Units of instruction include safety, measurement, tools, cutting tools and speeds, lathes, milling shapers, grinders, and other machine operation. Emphasis on applied academics, professional development, leadership, and organizational skills are integrated throughout the curriculum.	1 or 2  Max credit = 2	License Code: 17230-Machine Tooling Technology
17236	Welding Technology I	10-12	This course introduces students to a career in welding. The course begins covering various types of metal welding, brazing, flame cutting, properties of metals, blueprint reading, electrical principles, welding symbols and mechanical drawing. Emphasis on applied academics, professional development, leadership, and organizational skills are integrated throughout the curriculum. Welding Technology I is a perquisite course to Welding Technology II.	1 or 2  Max credit = 2	License Code: 17236-Welding Technology
17237	Welding Technology II  ◆ Prerequisite: Welding Technology I - 17236	11-12	Welding Technology II provides advanced training in the various welding applications in preparation for college welding programs or entering employment. The course will adhere to American Welding Society standards in welding processes. Continued emphasis will be placed on applied academics, professional development, leadership, and organizational skills.	2 Max credit = 2	◆ 10-12

Course Code	Course Name	Grade Levels	Description	High School Credit Options*	License/credential Required**
17238	Virtual Center Welding Technology Summer Academy	10-12	Welding Technology 17238 is a Summer Academy that allows students the opportunity to take fundamentals learned through online instruction, ITV instruction, or articulation from an accepted Agriculture program to gain training in advanced welding techniques. Students will be given more detailed instruction and hands-on training in American Welding Society recognized processes preparing them for industry certification testing.  Virtual Welding Technology Summer Academy must be a part of the Welding Technology or Ag Mechanics class for students in Virtual Centers only and must be offered as part of the Welding Technology program. The Virtual Center must receive prior approval from the Department of Career and Technical Education before offering the Welding Technology class as an option.	½ Max credit = ½	License Code: 17236-Welding Technology
17310	Recreational Small Engine Technology I	10-12	Recreational Small Engine Technology I includes the maintenance repair of a variety of small engines such as lawnmowers, outboard motors, chain saws and rototillers. The course includes theory and practical application lab. This course is a prerequisite to Recreational Small Engines II.	1 or 2  Max credit = 2	License Code:
17311	Recreational Small Engine Technology II  • Prerequisite: Recreational Small Engine Technology I - 17310	11-12	Recreational Small Engine Technology II provides advance instruction in maintenance repair of a variety of small engines. The course includes principles of the internal engine, reading technical manuals and customer service.	2 Max credit = 2	17310-Recreational Small Engine Technology ◆ 10-12

Course Code	Course Name	Grade Levels	Description	High School Credit Options*	License/credential Required**
17410	Exploration of Oil Industry Careers	10-12	This is a beginning course for students interested in exploring petroleum industry careers. The course introduces students to oil industry occupations and the occupations concerned with oil production from exploration to refining, including aptitude and interest. The course will cover the processes involved in exploration for oil and gas, obtaining mineral rights, and getting the oil from the ground to the pipeline.	½ or 1  Max credit = 1	License Code:
17413	Petroleum Industry Skills	10-12	The course will cover basic workplace safety and emphasize safety protocol required in the Petroleum Industry and in the oil field including safety practices on projects and the use of a safety officer. Students who successfully complete course modules and meet all safety standards will be NCCER and OSHA 10 Certified. Students will be introduced to the Production processes from land rights to pipeline and then the basic principles of oil field technology. The course will cover basic mechanical components and their application.	1  Max credit = 1	17400-Petroleum Technology ◆ 10-12
17812	Aviation Technology I	10-12	To provide students for employment in the aviation field. The course covers fundamentals of flight, flight operations, aviation weather, performance and navigation. The course also explores careers in air traffic control, flight dispatching and airport management. Units of instruction include; safety of flight, airport layout, aeronautical charts, radar, radio procedures, airplane power plant, aerodynamics, weather patterns and hazards. Emphasis on applied academics in math and science are integrated throughout the curriculum along with decision-making principles as it applies to flight-related factors.	1 or 2  Max credit = 2	License Code: 17812-Aviation Technology ◆ 10-12
17813	Aviation Technology II	11-12	Students will be prepared to pass the Federal Aviation Administration, FAA, private pilot verbal exam. Course will cover advanced flight topics as well as topics covered in Aviation I to an advanced level. Students will also work in teams to build a full scale aircraft.	1 or 2  Max credit = 2	

Course Code	Course Name	Grade Levels	Description	High School Credit Options*	License/credential Required**
17999	Cooperative Work Experience	11-12	Provides students with a regularly scheduled, supervised employment opportunity related to Trade and Industrial Occupations in order to develop and improve work skills. The employment must be preceded by, or concurrent with, classroom instruction related to the work experience, consistent with the student's occupational goals, and related to the Trade and Industrial Education program area. There shall be a training agreement among all partners to the work experience (school, employer, student, and parents/guardians) outlining the expectations of each party. The instructor shall also develop a specific training plan with the employer for each student placed. The training plan shall include provisions for assessment of student progress and for on-site visits by the instructor during the student's placement.  NOTE: Students must be at least 16 years old and	Minimum of ½ credit per semester, not to exceed 2 credits while in high school  Max credit = 2	License Code: 17999-Cooperative Work Experience
			may be paid a wage by the employer.		

<sup>\*</sup> High school curricular requirements are spelled out in NDCC 15.1-21-02 and High school unit - instructional time is NDCC 15.1-21-03. Maximum credit refers to the maximum units of credit a student may earn for a course over four years of high school. (Example: Band - a student may be enrolled in band all four years of high school -- earning a possible total of four units of credit.)

<sup>\*\*</sup> Please refer to the second page of the teacher's North Dakota Educator's Professional license to verify which subject areas a teacher is qualified to teach. Licenses and endorsements are obtained on a teaching license from the Education Standards and Practices Board (ESPB).

Credentials are obtained from the Department of Public Instruction (DPI) and are issued to individuals holding a current teaching license.